

App. No. 10/757,829
Office Action Dated August 8, 2005

Amendments to the Claims:

This listing of claims will replace all prior versions and listing of claims in the application.

Claims 13 and 14 are amended.

Claim 17 is new.

Listing of Claims:

1-12. (Canceled)

13. (Currently Amended) A method for manufacturing an acoustic matching member, the acoustic matching member comprising at least two layers including a first layer and a second layer that have different acoustic impedance values from each other, the first layer being made of a composite material of a porous member and a filling material supported by void portions of the porous member, the second layer being made of the filling material ~~or the porous member~~, and the first layer and the second layer being present in this stated order, the method comprising the steps of:

(a) filling voids of a porous member with a fluid filling material whose volume after solidification is not less than a volume of the voids of the porous member; and

(b) solidifying the fluid filling material inside of the voids and the surplus fluid filling material at the same time.

14. (Withdrawn and Currently Amended) A method for manufacturing an acoustic matching member, the acoustic matching member comprising at least two layers including a first layer and a second layer that have different acoustic impedance values from each other, the first layer being made of a composite material of a porous member and a filling material supported by void portions of the porous member, the second layer being made of ~~the filling material or the porous member~~, and the first layer and the second layer being present in this stated order, the method comprising the steps of:

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(a) filling at least one portion of voids of a porous member with a fluid filling material;
and

(b) solidifying the fluid filling material inside of the voids.

15. (Withdrawn) A method for manufacturing an ultrasonic transducer for transmitting or receiving ultrasonic waves, the ultrasonic transducer comprising an acoustic matching member and a piezoelectric member, the acoustic matching member comprising at least two layers including a first layer and a second layer that have different acoustic impedance values from each other, the first layer being made of a composite material of a porous member and a filling material supported by void portions of the porous member, the second layer being made of the filling material or the porous member, and the first layer and the second layer being present in this stated order, the method comprising the step of:

attaching a side of the first layer of the acoustic matching member to a surface of the piezoelectric member or to an outer surface of a closed container at a position opposed to a disposed position of the piezoelectric member.

16. (Withdrawn) A method for manufacturing an ultrasonic transducer for transmitting or receiving ultrasonic waves, the ultrasonic transducer comprising an acoustic matching member and a piezoelectric member, the acoustic matching member comprising at least two layers including a first layer and a second layer that have different acoustic impedance values from each other, the first layer being made of a composite material of a porous member and a filling material supported by void portions of the porous member, the second layer being made of the filling material or the porous member, and the first layer and the second layer being present in this stated order, the method comprising the steps of:

(a) attaching the porous member that does not contain the filling material to a surface of the piezoelectric member or to an outer surface of a closed container at a position opposed to a disposed position of the piezoelectric member; and

(b) then filling the porous member with a fluid filling material and solidifying the fluid filling material.

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17. (New) The method for manufacturing the acoustic matching member according to claim 13, wherein the filling material comprises epoxy resin.